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ABSTRACT

Self-efficacy theory maintains that self-efficacy expectancy, a belief about one's ability to perform a behavior successfully, is independent of outcome expectancy, a belief about the likelihood of the behavior leading to a specific outcome. To examine this hypothesis, subjects (N=95) read communications that differed in descriptions of the difficulty of learning and performing a behavior (self-efficacy expectancy) and the effectiveness of the behavior in producing a desired outcome (outcome expectancy). Results disclosed that increments in outcome expectancy increased intentions to perform the behavior. Increments in self-efficacy expectancy yielded nonsignificant increases in intentions. The outcome expectancy manipulation influenced expectations of self-efficacy. When the behavior was presented as relatively difficult to perform, subjects who believed the behavior was more likely to result in a favorable outcome expressed greater confidence in their ability to perform the behavior than those who perceived a relatively weak relationship between the behavior and its outcome. The degree of risk involved in attempting yet failing to perform correctly a behavior may determine the extent to which self-efficacy expectancy affects decisions about behavior. (Author)

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Self-Efficacy Expectancy and Outcome Expectancy: Their Relationship and Their Effects on Behavioral Intentions

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Running head. Self-Efficacy and Outcome Expectancy

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Self-Efficacy Expectancy and Outcome Expectancy: Their Relationship and Their Effects on Behavioral Intentions

Self-efficacy theory maintains that all processes of psychological change operate through the alteration of the individual's sense of personal mastery or efficacy (Bandura, 1977). According to this theory, psychological changes achieved through different methods and techniques can be explained and predicted by an evaluation of changes in the individual's expectations of self-efficacy, his belief that he is or is not capable of performing a behavior or set of behaviors. Expectations of personal efficacy determine what behaviors will be initiated, how much effort will be expended in performance, and how long the individual will persist when met with difficulty or failure (Bandura, 1977). This theory maintains further that an expectancy held by a person concerning a behavior and outcome can be viewed as two independent expectancies: an outcome expectancy, the belief that a given behavior will or will not lead to a given outcome; and a self-efficacy expectancy, the belief that the person is or is not capable of performing the requisite behavior. According to Bandura (1977), outcome expectancies will have little effect on decisions about behavior if people do not believe themselves capable of performing the behavior in question.

The distinction between efficacy and outcome expectancies may be important in designing successful behavior change procedures. In psychotherapy, for example, a client may fail to carry out a "homework" assignment recommended by the therapist because the client either (a) does not believe the recommendation will have the effect predicted by the therapist or (b) does not believe that he is capable of correctly performing the behavior. Determining the reason for this performance failure can be critical to the success of psychotherapy.

A more thorough understanding of efficacy and outcome expectancies has broader implications for theories of human cognition and behavior. Self-efficacy theory can be viewed as belonging to a larger family of psychological theories commonly referred to as expectancy-value theories. These theories maintain that people tend to engage in behaviors that they believe will get them what they want. The tendency to perform a behavior is viewed as the product of the reinforcement value of the expected outcome, and the expectation that a specified behavior (or behaviors) will result in that outcome. The expectancy component in expectancy-value theories (e.g., Belles, 1972; Feather, 1959; Mitchell, 1974; Rogers & Mewborn, 1976; Vroom, 1964) is usually an outcome expectancy, the belief that a specific behavior will produce a specific outcome. Self-efficacy expectancies have been largely ignored in expectancy-value theory and research, though their existence and importance have been noted (Mitchell, 1974). By proposing that "expectancy" is not a unidimensional phenomena but composed of two independent expectancies, self-efficacy theory has refined the expectancy-value framework.

The work of Bandura and his associates (Bandura, 1977; Bandura, Adams & Beyer, 1977; Bandura, Adams, Hardy, & Howells, 1980) has clearly established that changes in efficacy expectations and changes in behavior are positively correlated, suggesting that alterations in efficacy expectations may mediate the observed behavioral changes. Correlational techniques, however, reveal little about the direction of causal influence. If experimentally induced expectancies can be shown to yield systematic changes in intentions to perform a given behavior, then a stronger case can be made for maintaining that expectations and other cognitive events mediate behavior change. Granted that people do not always do what they say they

intend to do, recent work on the relationship between intentions and behavior (Fishbein & Ajzen, 1975) has demonstrated that behavioral intentions may be used as accurate predictors of behavior and may mediate behavioral changes. Bandura's work has been directed primarily toward producing behavioral changes and determining if concomitant changes in self-efficacy expectancy are evident. In contrast, the present experiment attempted to directly modify expectations of efficacy and outcome through experimental manipulation and to determine subsequent changes in behavioral intentions.

This experiment had two major purposes: (a) to investigate the relationship between self-efficacy and outcome expectancies, specifically, to test the hypothesized independence of these two expectancies; and (b) to determine the effects of these expectancies on intentions to perform a behavior. The method of attempted change was verbal persuasion, one of four sources of information concerning personal efficacy cited by Bandura (1977). (The remaining three are performance accomplishments, vicarious experience, and emotional arousal.) Though acknowledging that efficacy expectations induced by verbal persuasion are likely to be weak compared to expectations induced by actual or vicarious performance, Bandura (1977) has cited the need for research in the use of verbal persuasion as a way of altering efficacy expectations. In addition, Bandura et al. (1980) have demonstrated that the relationship between perceived efficacy and performance is constant whether efficacy enhancement is accomplished through enactive mastery experiences, vicarious performance attainments, or cognitive coping. It may be expected, therefore, that this relationship will also hold true for efficacy expectations induced by verbal persuasion.

In the present experiment, self-efficacy expectancy and outcome expectancy for a particular interpersonal skill (the "broken-record" technique frequently taught in assertiveness training) were manipulated factorially by the use of written communications. The effects of these communications were measured by self-reported intentions to perform the behavior described. Craighead and Craighead (in press) have presented a cogent discussion of the relevance of persuasive communication and attitude change research to the modification of maladaptive self-statements or cognitions. Expectations of self-efficacy can also be viewed as self-statements, cognitions, or attitudes about the self that are subject to modification through attitude-change procedures. The "broken-record" technique was selected as the target behavior for the communications because it has some relevance in clinical application and is simple to describe and explain. Based on self-efficacy theory, it was hypothesized that self-efficacy expectancy and outcome expectancy would have independent main effects on intentions to perform the behavior described, with higher levels of each producing stronger behavioral intentions.

Method

Design and Subjects

This experiment employed a 3 x 3 factorial design with three levels of outcome expectancy (high, low, and no information) and three levels of self-efficacy expectancy (high, low, and no information). Subjects were 95 students in introductory psychology classes who were given extra credit for their participation. The experimental paradigm is typical of those used in verbal persuasion research (e.g., Maddux & Rogers, in press).

Stimulus Materials

Written communications were designed to manipulate the independent variables. These communications were presented as part of a series of brochures on "Interpersonal Effectiveness Training." The essays described the "broken-record" technique frequently taught in assertiveness training. The essays differed in descriptions of the effectiveness of the technique (outcome expectancy) and descriptions of the difficulty of using the technique (self-efficacy expectancy). Arguments were presented and "research" cited to support the positions advocated in the "brochures." The high-outcome-expectancy essay stated that the technique is extremely effective ("Psychologists have found that. . .the broken-record technique is effective about 90% of the time") and the low-outcome-expectancy essay that it is relatively ineffective ("Psychologists know that the technique is successful only about 10% of the time"). In the high-self-efficacy essay, it was argued that the technique is very easy to learn and perform (". . .almost anyone can learn to use the technique quickly and easily. . . no one needs the help of a psychologist or counselor to use it. . ."). The opposite position was argued in the low-self-efficacy essay ("Mastering the technique requires a great deal of practice and hard work. . .requires individualized help from a psychologist or counselor"). The no-information essays omitted information about either the difficulty of the technique or its effectiveness. The length of the essays ranged from approximately 900 to approximately 1200 words.

Dependent Measures

A check on the validity of the self-efficacy manipulation consisted of three questionnaire items concerned with ability to learn and perform the "broken-record" technique ("I believe I could learn to use the broken-record technique," "The broken-record technique would be difficult for

me to learn," "The next time someone tries to talk me into something I don't want to do, I believe I could use the broken-record technique if I wanted to"). The manipulation check for outcome expectancy consisted of two items concerned with the effectiveness of the technique ("For those who can use it, the broken-record technique is a very effective way to avoid giving in to other people," "If I were able to use the broken-record technique, it would be much harder for other people to take advantage of me").

The major dependent measure, intention to perform the behavior, consisted of four items: "I intend to start using the broken-record technique," "I intend to try using the broken-record technique," "If I try to use the broken-record technique and it doesn't work the first few times, I'll give it up." "The next time I have trouble returning merchandise, I'll use the broken-record technique." Additional "filler" items were included in the questionnaire to support the cover story. All items were rated on 14-point graphic rating scales ranging from "strongly disagree" to "strongly agree." Several items were so worded that higher numbers represented greater disagreement. Scores on these items were converted so that a higher number represented greater agreement. Scores on all dependent measures are based upon the mean ratings for the items in each cluster.

Procedure

Subjects were run in groups from three to eight members. Within these groups, subjects were assigned randomly to the experimental conditions. The experiment was presented as part of a series of studies to develop and evaluate a set of brochures on "Interpersonal Effectiveness Training." The purported purpose of these brochures was to inform people of the effectiveness or lack of effectiveness of a number of

interpersonal skills that have been receiving considerable attention in "self-help" books and other media. Subjects were further told that their reactions and opinions concerning the material presented in the brochures were desired so that adjustments in the material could be made. In this experiment, the brochure was presented as a discussion of the "broken record" technique. Subjects were instructed to underline the key phrase or sentence in each paragraph of the essay. This instruction was given to insure close attention to the material. Approximately 10 min. was allowed for reading the essays. They were then collected and the questionnaires distributed. Afterward, the subjects were thanked for their participation and fully debriefed.

Results

A multivariate analysis of variance was performed with three levels of self-efficacy expectancy and three levels of outcome expectancy. Using Wilks-Lambda as criterion for significance, main effects were found for both self-efficacy expectancy, Lambda = .478, $F(18, 158) = 3.92$, $p < .0001$, and outcome expectancy, Lambda = .577, $F(18, 158) = 2.78$, $p < .001$. The interaction effect approached significance, Lambda = .522, $F(36, 298) = 1.42$, $p < .07$. Pillai's trace for the interaction, however, was .529, $p < .05$. The univariate analyses for these effects are reported below. Comparisons between means were performed using Duncan's multiple range test with a significance level set at $p < .05$. The means reported are based on the 14-point scale.

Manipulation Checks

Self-Efficacy Expectancy. The univariate analysis revealed main effects on the self-efficacy expectancy measure due to manipulations of both self-efficacy, $F(2, 87) = 30.77$, $p < .0001$, and outcome expectancy,

$F(2, 87) = 6.55$, $p < .01$. The interaction effect was also significant, $F(4, 87) = 3.12$, $p < .02$. The high-self-efficacy essay ($M = 12.0$) produced greater expectations of self-efficacy than the no-information essay ($M = 11.1$), which, in turn, was more effective than the low-self-efficacy essay ($M = 8.2$). Thus, the high-self-efficacy essay produced an increase in self-efficacy expectancy over the no-information baseline and the low-self-efficacy essay a decrease below this baseline. The outcome expectancy manipulations had a corresponding effect on self-efficacy expectancy. The high-outcome essay ($M = 11.2$) resulted in greater self-efficacy expectancy than the no-information essay ($M = 10.6$), which, in turn, was more effective than the low-outcome essay ($M = 9.4$). These main effects, however, must be interpreted in light of the significant interaction effect. The effect of the outcome-expectancy essays on self-efficacy expectancy was more pronounced with the low-self-efficacy essay than with the high-self-efficacy essay. Within the low-self-efficacy condition, the difference between the high- ($M = 9.8$) and low-outcome ($M = 5.8$) essays on self-efficacy was significant ($p < .05$); within the high-self-efficacy condition, the difference on self-efficacy between the high- ($M = 12.0$) and low-outcome ($M = 11.5$) essays was not statistically significant.

Outcome Expectancy. The high-outcome-expectancy essay produced stronger beliefs in the effectiveness of the behavior described in the essay than the no-information essay, which produced stronger expectancies than the low-outcome-expectancy essay, $F(2, 87) = 15.74$, $p < .0001$ ($Ms = 11.3$, 10.3, and 7.3, respectively). No other significant effects were revealed. As with the self-efficacy essays, the high-outcome-expectancy essay resulted in an increase above the no-information baseline, and the low-outcome-expectancy essay a decrease below this baseline.

Intentions to Perform the Behavior

A main effect on intentions to perform the behavior was associated with the outcome-expectancy manipulation, $F(2, 87) = 12.32$, $p < .0001$. Stronger intentions to use the "broken-record" technique were reported by subjects in the high-outcome-expectancy group ($M = 9.3$) than by subjects in the no-information group ($M = 8.4$), who, in turn, reported stronger intentions than subjects in the low-outcome-expectancy group ($M = 6.1$).

A trend in the predicted direction was found for the effect of self-efficacy expectancy on intentions, $F(2, 87) = 2.01$, $p < .14$ (Ms for high-, no-information-, and low-self-efficacy conditions = 8.6, 7.9, and 7.2, respectively). The interaction was not significant, $F < 1$.

Discussion

This experiment demonstrated that expectations of outcome and self-efficacy can be successfully manipulated by verbal persuasion and that these expectancies can cause changes in behavioral intentions. The three major findings of interest were: (a) increments in outcome expectancy caused significant increases in intentions to perform the behavior described, (b) increments in self-efficacy expectancy did not produce corresponding significant increases in intentions, though a trend was found in the predicted direction, and (c) outcome expectancy influenced perceptions of self-efficacy.

As predicted, outcome expectancy had a positive main effect on intentions to perform the behavior described in the communications. When the behavior was presented as highly likely to result in a favorable outcome, subjects reported greater intentions to perform the behavior than when no information was given about the likelihood of the outcome and when the behavior was presented as unlikely to lead to this outcome.

Expectations of self-efficacy failed to significantly influence intentions to perform the behavior, though a trend in the predicted direction was found. The communications produced significant differences in efficacy expectancy, but these differences did not yield corresponding differences in behavioral intentions. These data suggest that expectations of self-efficacy may not always exert as strong an influence as expectations of the behavior's outcome on one's intentions to perform the behavior. In light of the demonstrated relationship between intentions and the performance of a behavior (Fishbein, & Ajzen, 1975), an individual's expectations concerning a behavior's outcome may have, under some conditions, greater influence on performance of the behavior than expectations of self-efficacy.

A comparison of the target behavior in this experiment and in previous self-efficacy research (Bandura, 1977; Bandura et al., 1977; Bandura et al., 1980) suggests an explanation for the relative ineffectiveness of self-efficacy expectancy in influencing intentions in the present experiment. This previous work has focused primarily on fearful and avoidant behaviors, but the behavior described in the present experiment was a relatively simple interpersonal skill that involved minimal risk. Perhaps the influence of self-efficacy is partially dependent on the risk perceived in attempting to perform a behavior but failing to perform the behavior correctly. The more difficult a behavior is to learn and perform, the greater the probability that the behavior will not be performed correctly. If no penalty results from attempting a behavior and then failing, then the attempt involves little risk. If the perceived outcome of this same behavior is perceived as favorable, attempting the behavior may lead to possible benefits. The combination of low risk and possible gain makes an attempt more likely, even if the behavior

is seen as difficult to perform (i.e., if self-efficacy expectancy is weak). If attempting the behavior and failing is believed to lead to aversive consequences, a difficult behavior may be less likely to be attempted, despite the possibility of gain from successful performance. If the risk of aversive consequences for failure is low and the probability of gain for success is low, then perceptions of one's ability to perform the behavior may have less effect on one's decision to attempt the behavior. As the risk of aversive consequences becomes greater, however, confidence in one's ability to perform the behavior may have a more pronounced effect on the decision to attempt the behavior.

Another explanation for the lack of a main effect for self-efficacy is that efficacy expectancies induced by verbal persuasion alone are relatively ineffective unless accompanied by a performance experience, either enactive or vicarious. Bandura (1977) has suggested that verbal persuasion may be more useful in conjunction with enactive methods rather than as the primary mode of efficacy enhancement.

Outcome expectancy also influenced self-efficacy expectancy. Individuals who believed that the behavior was more likely to lead to a favorable outcome also tended to express greater confidence in their ability to successfully perform the behavior than individuals who perceived a weaker relationship between the behavior and its presumed outcome. As indicated, however, by the interaction of the outcome expectancy and self-efficacy expectancy manipulations on the self-efficacy measure, the effect of outcome expectancy on self-efficacy may depend on the type of information provided about the difficulty of the behavior. If a behavior is presented as difficult to perform (i.e., low self-efficacy), people may adjust their beliefs in their abilities according to the perceived effectiveness of the behavior: the more likely the behavior is to produce

the desirable outcome, the more confidence people will express in their ability to perform the behavior. An interesting question concerns the conditions under which efficacy expectancy may have a corresponding effect on outcome expectancy. In the present experiment, efficacy expectancy did not influence beliefs about the effectiveness of the specified behavior. Perhaps beliefs about the self are more easily influenced by "objective" beliefs about cause-and-effect relationships than these latter beliefs are influenced by perceptions of the self.

In summary, manipulations of self-efficacy expectancies may not always significantly influence decisions to perform certain behaviors, and under some conditions expectations of outcome may be more influential. It is proposed that the risk of aversive consequences involved in attempting yet failing to correctly perform a behavior may determine the extent to which self-efficacy expectancy affects decisions about behavior: the greater the risk of aversive consequences, the greater the salience of self-efficacy. Outcome expectancy also appears to influence self-efficacy expectancy. When a behavior is presented as relatively difficult to perform, individuals who believe the behavior is more likely to result in a favorable consequence may express greater confidence in their ability to perform the behavior than those who perceive a relatively weak relationship between the behavior and its outcome. For a behavior presented as relatively easy to perform, outcome expectancy may have less influence on expectations of self-efficacy.

References

Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 1977, 84, 191-215.

Bandura, A., Adams, N. E., & Beyer, J. Cognitive processes mediating behavioral change. Journal of Personality and Social Psychology, 1977, 35, 125-139.

Bandura, A., Adams, N. E., Hardy, A. B., Howels, G. N. Tests of the generality of self-efficacy theory. Cognitive Therapy and Research, 1980, 4, 39-66.

Bolles, R. C. Reinforcement, expectancy, and learning. Psychological Review, 1972, 79, 394-409.

Craighead, W. E., & Craighead, L. W. Implications of persuasive communication research for the modification of self-statements, Cognitive Therapy and Research, in press.

Feather, N. T. Subjective probability and decision under uncertainty. Psychological Review, 1959, 66, 150-164.

Fishbein, M., & Ajzen, I. Belief, attitude, intention, and behavior. Reading, Mass.: Addison-Wesley, 1975.

Maddux, J. E. & Rogers, R. W. Effects of source expertness, physical attractiveness, and supporting arguments on persuasion: A case of brains over beauty. Journal of Personality and Social Psychology, in press.

Mitchell, T. R. Expectancy models of job satisfaction, occupational preference, and effort: A theoretical, methodological, and empirical appraisal. Psychological Bulletin, 1974, 81, 1053-1077.

Rogers, R. W., & Mewborn, C. R. Fear appeals and attitude change: Effects of a threat's noxiousness, probability of occurrence, and the efficacy of coping responses. Journal of Personality and Social Psychology, 1976, 34, 54-61.

Vroom, V. H. Work and motivation. New York: Wiley, 1964.